UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,565	01/06/2006	Keisuke Funaki	283189US8PCT	3738

22850 7590 09/29/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER
FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
09/29/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/563,565	FUNAKI ET AL.	
	Examiner	Art Unit	
	LAWRENCE D. FERGUSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 January 2006* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/6/06;4/6/06;7/24/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Preliminary amendment

1. In the preliminary amendment filed on January 6, 2006, claims 5-6, 12 and 20 were amended rendering claims 1-20 pending.

Information Disclosure Statement

2. The references disclosed within the information disclosure statements (IDS) submitted on January 6, 2006; April 6, 2006 and July 24, 2008, have been considered and initialed by the Examiner.

Objection of Abstract

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. The abstract of the disclosure is objected to because it should be limited to a single paragraph and contain no more than 150 words. Correction is required. See MPEP 608.01(b).

Claim Rejections – 35 USC § 102(b)

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirai et al (U.S. 6,664,313).

Hirai discloses a light reflection composition (sheet) having a thickness of 2mm comprising polycarbonate resin composition containing titanium oxide, where the composition has a light reflectance of not less than 90% and a light transmittance of not more than 0.3% (column 1, line 62 through column 2, line 14 and column 10, lines 42-48). Because the composition of Hirai contains a single layer of material, the composition is construed as a sheet, as in claim 1.

Regarding claim 2, the reference discloses the content of titanium oxide is in the range of 3 to 30 parts by weight based on 100 parts by weight of the polycarbonate resin (column 4, lines 50-52).

Regarding claim 3, the polycarbonate resin composition excel in flame retardancy, including the thin test pieces which pass the level of V-0 in a flame test (column 15, lines 16-20). In claim 3, the phrase, "in a vertical flame retardant test according to a UL94 method" introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in

the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Regarding claims 5-6, Hirai discloses a molding article (column 1, line 66 through column 2, line 3). In claims 5 and 6, the phrases, "prepared by heating the light reflection sheet at a temperature of 160 to 200˚C and then thermally molding it at a spreading magnification of 1.1 to 2 times" and "prepared by thermally molding the light reflection sheet" introduces process limitations to the product claims. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims. Because Hirai does not disclose the molded article is uneven, the article meets the limitation of having an unevenness of 0.0.

Claim Rejections – 35 USC § 103(a)

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirai et al (U.S. 6,664,313).

Hirai is relied upon for instant claim 1, as above. Hirai discloses extrusion molding the polycarbonate resin composition (column 10, lines 42-56) where it would have been expected to one of ordinary skill in the art for the molded composition to be dried prior to extruding and molding, so the material can be shaped. The material could not be shaped properly in an undried state. Additionally, although Hirai does not teach the temperature of time of the processes, because the reference discloses the same sheet material for the same purpose (light reflection), it would have been obvious to one of ordinary skill in the art for the drying temperature and time and molding/rolling temperature to be met in the manufacturing of the light reflection sheet of Hirai.

Claim Rejections – 35 USC § 103(a)

8. Claims 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirai et al (U.S. 6,664,313) in view of Ekinaka et al (U.S. 6,846,567).

Hirai is relied upon for instant claim 1, as above. Hirai does not disclose a light fast layer. Because Hirai does not specifically teach alight fast layer, which comprises an acryl base resin and light stabilizer component, one of ordinary skill in the art would look to the prior art, such as Ekinaka, to teach a light fast layer within the disclosed light reflection sheet. Ekinaka teaches a coating layer formed on the surface of a molded polycarbonate substrate (column 3, line 66 through column 4, line 10), where the

coating comprises an acrylic resin and a light stabilizer and/or ultraviolet absorber component (column 11, line 60 through column 12, line 6) and the coating layer has a thickness of 0.1 to 10μm (column 12 lines 36-41). The ultraviolet absorbent component contains a benzophenone base compound (column 10, lines 55-67). Hirai and Ekinaka are combinable because they are related to molded polycarbonate sheets. It would have been obvious to one of ordinary skill in the art to have coated the coating material (light fast layer) having an acrylic resin and light stabilizer on the polycarbonate light reflection sheet of Hirai to achieve the predictable result of improving the weatherability and durability of the polycarbonate sheet (column 2, lines 25-28) as taught in Ekinaka, as in claims 7-9 and 18. In claim 7, the phrase, “cuts or absorbs a UV ray in a thickness of 0.5 to 20um on at least one face of a base sheet” introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims. In claims 7-8, the term “polymerizable” constitutes a ‘capable of” limitation and that such a recitation that an element is ‘capable of’ performing a function is not a positive limitation but only requires the ability to so perform.

Regarding claims 10 and 16, Hirai discloses a light reflection composition (sheet) having a light reflectance of not less than 90% (column 10, lines 42-48). In claims 10 and 16, the phrase, "measured by irradiating the surface of the light-fast layer with light

of a visible light region wavelength" introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.
Regarding claims 11, 17 and 19, because Hirai and Ekinaka comprise the same material (light reflecting sheet and light fast layer) as Applicant, it would have been expected to one of ordinary skill in the art for a color difference of 5% or less of the light fast layer between before and after irradiation of the light fast layer and for a difference between a total reflectance to be 4% or less. In claims 11 and 19, the phrase, "irradiating the surface of the light fast layer with a UV ray in an energy amount of 20 J/cm by means of a high pressure mercury lamp is 10 or less" introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Regarding claims 12 and 20, Hirai discloses a molding article (column 1, line 66 through column 2, line 3). In claims 12 and 20, the phrase, "obtained by thermally molding the light reflecting sheet" introduces a process limitation to the product claim.

The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Regarding claims 13-15, Ekinaka teaches a layer comprising silica particles (diffusion layer) having a diameter and dispersed in a solvent (column 13, lines 18-21) such as acryl resin. Although the reference does not disclose the exact diameter or mass percentage of the particle, a particle diameter and mass percent are optimizable. It would have been obvious to one of ordinary skill in the art to optimize the particle size and mass percent of the diffusion layer because discovering the optimum or workable range involves only routine skill in the art. The particle size and mass percent of the silica particles directly affect the mechanical strength of the diffusion layer. *In re Aller* 105 USPQ 233 and see *In re Boesch*, 617 USPQ 215. Additionally, it would have been obvious to increase the particle size of the silica particles in the diffusion layer of Ekinaka to improve the reflecting properties of the diffusing layer. Because claim 14 only requires organic particles or inorganic particles, the Examiner is examining claims 14 and dependent claim 15 based upon an inorganic particle.

Claim Rejections – 35 USC § 102(b)

9. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiroshi et al (JP 2003-176367 machine translation).

Hiroshi discloses a light reflecting sheet comprising polycarbonate and a filler of 14 to 50% of titanium dioxide having a thickness of 1.5mm and a reflectance of greater or equal to 92% (abstract, paragraph 0010, 0013, 0019 and 0021) as in claims 1-2.

Regarding claim 3, because Hiroshi discloses a light reflecting sheet having similar materials with a similar function as claimed, it is inherent for the sheet to have a flame retardancy as in claim 3. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Mere recitation of a newly-discovered function or property, inherently possessed by things in prior art, does not cause claim drawn to those things to distinguish over prior art. Additionally, anticipation by a prior art reference does not require that the reference recognize the inherent properties that may be possessed by the prior art reference. See Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 633 (Fed. Cir.) (1987).

Regarding claims 5-6, the reference discloses the sheet is shaped, which is interpreted as molded (paragraph 0021). In claims 5 and 6, the phrases, “prepared by heating the light reflection sheet at a temperature of 160 to 200˚C and then thermally molding it at a spreading magnification of 1.1 to 2 times" and “prepared by thermally molding the light reflection sheet” introduces process limitations to the product claims.

The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims. Because Hirai does not disclose the molded article is uneven, the article meets the limitation of having an unevenness of 0.0.

Claim Rejections – 35 USC § 103(a)

10. Claims 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroshi et al (JP 2003-176367 machine translation) in view of Ekinaka et al (U.S. 6,846,567).

Hiroshi is relied upon for instant claim 1, as above. Hiroshi does not disclose a light fast layer. Because Hiroshi does not specifically teach alight fast layer, which comprises an acryl base resin and light stabilizer component, one of ordinary skill in the art would look to the prior art, such as Ekinaka, to teach a light fast layer within the disclosed light reflection sheet. Ekinaka teaches a coating layer formed on the surface of a molded polycarbonate substrate (column 3, line 66 through column 4, line 10), where the coating comprises an acrylic resin and a light stabilizer and/or ultraviolet absorber component (column 11, line 60 through column 12, line 6) and the coating layer has a thickness of 0.1 to 10μm (column 12 lines 36-41). The ultraviolet absorbent

component contains a benzophenone base compound (column 10, lines 55-67). Hiroshi and Ekinaka are combinable because they are related to molded polycarbonate sheets. It would have been obvious to one of ordinary skill in the art to have coated the coating material (light fast layer) having an acrylic resin and light stabilizer on the polycarbonate light reflection sheet of Hiroshi to achieve the predictable result of improving the weatherability and durability of the polycarbonate sheet (column 2, lines 25-28) as taught in Ekinaka, as in claims 7-9 and 18. In claim 7, the phrase, “cuts or absorbs a UV ray in a thickness of 0.5 to 20um on at least one face of a base sheet” introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims. In claims 7-8, the term “polymerizable” constitutes a ‘capable of” limitation and that such a recitation that an element is ‘capable of’ performing a function is not a positive limitation but only requires the ability to so perform.

Regarding claims 10 and 16, Hiroshi discloses a light reflection composition (sheet) having a light reflectance of greater than 92% (abstract). In claims 10 and 16, the phrase, "measured by irradiating the surface of the light-fast layer with light of a visible light region wavelength" introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art,

the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Regarding claims 11, 17 and 19, Hiroshi discloses a color difference of five or less (paragraph 0029). Because Hiroshi and Ekinaka comprise the same material (light reflecting sheet and light fast layer) as Applicant, it would have been expected to one of ordinary skill in the art for a difference between a total reflectance to be 4% or less. In claims 11 and 19, the phrase, "irradiating the surface of the light fast layer with a UV ray in an energy amount of 20 J/cm by means of a high pressure mercury lamp is 10 or less" introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Regarding claims 12 and 20, Hiroshi discloses a molding article (column 1, line 66 through column 2, line 3). In claims 12 and 20, the phrase, "obtained by thermally molding the light reflecting sheet" introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a

different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Regarding claims 13-15, Ekinaka teaches a layer comprising silica particles (diffusion layer) having a diameter and dispersed in a solvent (column 13, lines 18-21) such as acryl resin. Although the reference does not disclose the exact diameter or mass percentage of the particle, a particle diameter and mass percent are optimizable. It would have been obvious to one of ordinary skill in the art to optimize the particle size and mass percent of the diffusion layer because discovering the optimum or workable range involves only routine skill in the art. The particle size and mass percent of the silica particles directly affect the mechanical strength of the diffusion layer. *In re Aller* 105 USPQ 233 and see *In re Boesch*, 617 USPQ 215. Additionally, it would have been obvious to increase the particle size of the silica particles in the diffusion layer of Ekinaka to improve the reflecting properties of the diffusing layer. Because claim 14 only requires organic particles or inorganic particles, the Examiner is examining claims 14 and dependent claim 15 based upon an inorganic particle.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks, can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Lawrence Ferguson/
Patent Examiner, Art Unit 1794

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794